

Septic Tank

SCOPE OF WORK

PROJECT: **Septic Tank**

A/ STATEMENT OF WORK (SOW)

- 1/ Project is to begin as soon as possible.
- 2/ Project includes main items as follow:
 - a-/ Excavation for room for underground septic tank
 - b/ Compacting the ground
 - c-/ Compacting a layer rough stone.
 - d-/ Putting a layer of plastic sheet of 0.2mm thick.
 - e-/ Providing two layers of re-bar steel.
 - f-/ Pouring concrete G 250 for septic tank .
 - g-/ Waterproofing for septic tank.
 - h-/ Installing piping system

B/ SPECIFICATION:

B-1/ Construction: As drawings attached.

a-/ Foundation, wall:

- Bottom of septic tank must be impacted before placing lean concrete up to 97% of density.
- Lean concrete: Stone 4x6, grade 100.
- Concrete for whole septic tank: stone 1x2, grade 250. Thickness of wall, bottom and top of septic tank: 200mm. Thickness of partitions will be 100mm.
- Mortar: Grade 75, thickness: 20mm.
- Waterproofing for whole inner area of septic tank.
- Sand using for mortar and concrete shall be clean sand and must not have soil, rubbish or other dirty materials.
- Cement using for septic tank shall be one brand of cement. Suggested brand: Ha Tien Portland PC300 or Sao Mai Portland PC300 or equivalent .
- Reinforcement steel bars must be Re-bar steel must be steel rod $\Phi 10$, free from rust and mill scale, earth or other materials that reduces or destroy bond with concrete. Reinforcement steel shall meet TCVN 6285.
- Concrete for septic tank shall be ready-mix concrete. Product of Tra My or Dong A or equivalent.
- Placing concrete in forms schedule for septic tank shall be obtained the approval from the Contracting Officer in advance.
 - Water barrier material shall be provided at the conjunction between concrete bottom and concrete walls of water tank.

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- Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures for consolidation of concrete.
- Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically and uniformly spaced locations no further than the visible effectiveness of the machine. Place vibrators to rapidly penetrate place layer and at least 150mm into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set.
- Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.
- Provide moisture curing by following method:
 - Keep concrete surface continuously wet by covering with water.
 - Use continuous water-fog spray
 - Cover concrete surface with specified absorptive cover, thoroughly saturate cover with water, and keep continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with a 100mm lap over adjacent absorptive covers.

B-3/ Piping: As attached drawings.

Installing a new sanitary piping system connecting from all sanitary wares of all toilets to the new septic tank.

1/ Piping:

The kind of pipe shall be used as following brand:

-DE NHAT uPVC pipes and fittings (ASTM)

-BINH MINH uPVC pipes and fittings (TCVN6151: 1996 & BS 3505: 1968)

-Working pressure $\geq 6\text{Kg/ cm}^2$.

2/ Installation:

-Use PVC glue to install uPVC pipes.

-Use two elbow 135° to install bends instead of one elbow 90° .

-The top of underground pipes must be installed deeper than ground surface 300mm, and must be back filled with sand around the pipe 150mm. The distance between two concrete bases for supporting of underground pipes is not longer than 2000mm.

-Install piping pitched down in direction of flow, at slope of 1%.

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-Storm and sanitary pipes shall be pressure testing with pressure at 1.5 bar. This pressure shall be maintained on the system minimum of 24 hours.

C/ SPECIAL NOTES:

Special notes should be made of the following:

- (a) All materials, equipment are to be used or installed for this project, shop drawings, working schedule shall be approved in advance by Contracting Officer of U.S. Consulate General (C.O), in accordance with recommendations of the manufacture.
- (b) Debris and other waste materials must not be allowed to accumulate on the site. Contractor will transport materials off U. S. government property and legally dispose of them on daily basis. Contractor must not burn any demolished materials on site.
- (c) Contractor agrees to comply with U.S. Government security procedures on site at all times.
- (d) Contractor will comply with safety rules.
- (e) Contractor will not damage, break or breach the perimeter walls or adjacent facilities at 7A Mac Dinh Chi in places other than that specified under the construction work.
- (f) Contractor will provide liability insurance for workers on site.
- (g) Contractor must outline his methodology (in his proposal) for the construction of the structure.
- (h) Toilet and parking facilities for workers during the construction time shall remain the responsibility of the contractor.
- (i) Working hours shall be 8 AM to 5 PM, Mondays through Saturdays.
- (j) Ensure that planters and trees around the structure to be constructed are protected from damage and destruction.
- (k) It shall be the Contractor's responsibility to provide a completely safe and workable system in accordance with the requirements of this specification, and the accompanying drawings and schedules all to the entire satisfaction of the Contracting Officer.
- (l) The Contractor shall examine all accompanying drawings and specifications to make sure that all requirements are thoroughly understood. In case where, in his opinion, there are omissions and /or errors in any of these documents, he shall inform the Contracting Officer immediately.
- (m) All materials, equipment and finished works shall be kept in good condition. The complete work shall be the Contractors property until handed over to the U.S Government.
- (n) Bids must include:
 - Length of time in days necessary to complete the project.
 - References.

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- Total cost estimate with clearly defined line items and costings by line items. Provide specifications, quantities and cost of all materials, labor and services.
- (o) The U.S. Government will pay for all works upon completion and acceptability of the project.

END OF SCOPE OF WORK